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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/534,611

11/02/2005

Michel Beauvy

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EXAMINER

SCHIRO, RYAN RAYMOND

ART UNIT

PAPER NUMBER

1792

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/534,611	<b>Applicant(s)</b> BEAUVY ET AL.	
	<b>Examiner</b> RYAN SCHIRO	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 41-89 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-89 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/11/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

Art Unit: 1792

### DETAILED ACTION

Claims 41-89 are pending and presented for examination.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 41-44, 46-53, 67, 68 and 73-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dippel et al. (US 3390988) in view of Csordas (US 2982614).

4. Dippel teaches a method of producing metallic images on aluminum to form a porous aluminum oxide layer (abstract). The treatment solution contains mercurous ions and silver ions can be added to the bath to give rise to the formation of a silver image, as required by claims 41, 46, 47, 48 and 88 (col. 1, lines 45-53). Silver nitrate, a salt of silver, is a preferred form of silver ion included in the solution, as required by claim 50 (col. 2, lines 19-22). The surface must be degreased, and if necessary, etched in order to remove the natural oxide film, as required by

Art Unit: 1792

claim 41. The alumina layer may also be intensified after activation by means of chemical reduction of copper, nickel or cobalt salt with the aid of a reducing agent for this salt into an image consisting of copper nickel or cobalt, as required by claims 67 parts f and g, 68 and 73-75 (col. 6, lines 56-62).

5. Dippel does not teach that the alumina is exposed to a wet oxidizing atmosphere, as required by claim 41.

6. Csordas teaches a process for producing alumina in which the surface of an aluminum body is amalgamated and exposed to oxygen and water vapor, as required by claim 41 (col. 1, lines 53-58). The amalgam is usefully produced by contacting, for example by dipping the aluminum body into an aqueous solution of a mercuric salt, as required by claims 49 and 50 (col. 1, lines 60-64). It is then rinsed with water and dried with an airstream saturated with water vapor at a temperature of approximately 30 degrees C, as required by claims 41 and 51-53 (col. 1, lines 63-70). The aluminum substrate blocks are provided with a cooling system, as required by claims 42 and 43 (col. 2, lines 3-6). The mercury may be removed by rinsing and reapplied to repeat the process, as required by claim 44 (col. 3, lines 1-4).

7. It would have been obvious to a person ordinarily skilled in the art at the time of the invention to use an amalgam containing silver with the wet oxidizing atmosphere and process steps of Csordas to give a monolithic hydrated alumina, as required by claim 41. One would have been motivated to use silver in the amalgam because Dippel teaches that silver is a preferred material for use in photographic systems.

8. It also would have been obvious to a person ordinarily skilled in the art at the time of the invention to use silver in the concentrations required by claims 48 and 88. One would have been

Art Unit: 1792

motivated to use the required concentrations because the teachings of Dippel show that the silver is useful in forming an image. Image forming can be easily modified to make the image darker or lighter by the amount of the image forming agent present in the solution. Therefore, silver content is considered cause effective, based on the type of image being formed. It is well settled that determination of optimum values of cause effective variables such as the silver content of the amalgam is within the skill of one practicing in the art. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

9. The high temperature required by claims 67 and 74 and use of hydrogen as a reducing agent as required by claims 75 and 89 would have been obvious to a person ordinarily skilled in the art at the time of the invention. One would have been motivated to increase the temperature because Dippel teaches decomposing and reducing the metal salt and it is well known in the art that increasing temperature is a general way of decomposing or reducing a inorganic comounds. Also, it is well known that hydrogen is a preferred reducing agent, as required by claim 75.

10. Neither Dippel nor Csordas teach that the aluminum is very pure and heating the formed substrate with acid or base, as required by claims 45, 54, 55 and 59-61.

11. Claims 45, 54, 55, 59-61, 83 and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dippel in view of Csordas further in view of Puskas (US 4151267).

12. Puskas teaches a process for producing alumina from aluminum metal by stripping the oxide layer with acidic aqueous medium before reacting the surface to form alumina (abstract). It is known that a purity of 99.99% or better is expected from the alumina starting material, as required by claim 45 (col. 1, lines 13-16). In making high purity alpha alumina, the wet hydrated

Art Unit: 1792

alumina is subjected to heating in an acidic solution, as required by claims 54, 55, 59, 83 and 84 (col. 2, lines 14-45). Hydrochloric acid may be contacted with the substrate, as required by claim 60 (col. 3, lines 1-14). Ammonium hydroxide may be introduced to the substrate, as required by claim 61 (col. 3, lines 15-18).

13. It would have been obvious to a person ordinarily skilled in the art at the time of the invention to modify the preparation method of Dippel in view of Csordas to include that the aluminum is very pure and heating the formed substrate with acid or base, as required by claims 45, 54, 55 and 59-61. One would have been motivated to make such a modification because Csordas teaches forming alpha alumina and Puskas teaches an improved method for forming the same type of alumina.

14. Claims 56, 57, 62, 65-68, 71-73 81, 82 and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dippel in view of Csordas further in view of Puskas further in view of Murrell (US 4778779).

15. Murrell teaches a method of forming a catalyst comprising silica supported on the surface of alumina which is prepared by compositing particles of silica with the alumina and steaming the composite at high temperature of at least 500 degrees and preferably at least 700 degrees Celsius, as required by claims 56, 57, 62, 65-68, 71-73, 81, 82 and 85 (col. 2, lines 44-48).

16. It would have been obvious to a person ordinarily skilled in the art at the time of the invention to combine the teachings of Dippel in view of Csordas further in view of Puskas with the heat and impregnation teachings of Murrell, as required by claims 56, 57, 62, 65-68, 72, 81

Art Unit: 1792

and 82. One would have been motivated to make this combination because Murrell is an improved method of modifying micron size alumina particles, which is also the object of Puskas.

17. Claims 56, 57, 62, 65-68, 73, 81 and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dippel in view of Csordas further in view of Puskas further in view of Murrell further in view of Davis (US 5187138).

18. Davis teaches a catalyst which has a Group VIII metal on an alumina support that is surface treated with at least 0.5 wt% silica or silica precursor, as required by claims 56 and 57 (abstract). The metals are impregnated or added onto the support as metal salts or acids, such as nickel or cobalt nitrate, as required by claims 64, 71 and 73 (col. 3, lines 41-45).

Tetraalkoxysilane is a preferred soluble silica containing compound, as required by claims 58 and 63

19. It would have been obvious to a person ordinarily skilled in the art at the time of the invention to combine the specific silica precursor and metal salts of Davis with the process of Dippel in view of Csordas further in view of Puskas further in view of Murrell, as required by claims 56, 57, 62, 65-68, 81 and 82. One would have been motivated to make this combination because teaches an improved catalyst with silica in the alumina, which is also the object of Murrell.

20. It would have been obvious to a person ordinarily skilled in the art at the time of the invention to combine the method of the teachings of Dippel in view of Csordas further in view of Puskas further in view of Murrell further in view of Davis with the use of a polymer or carbon as

Art Unit: 1792

the compound for impregnating the alumina, as required by claims 69, 70, 76-80, 86 and 87. One would have been motivated to make this combination because it is well known in the art to use elemental carbon to strengthen metal substrates, such as in the production of steel from iron and carbon, and polymers are also well known in the art to give a metal substrate desired properties such as insulating or conductive properties as well as flexibility and other structural properties. Graphite and hydrocarbon cracking are two well known ways of obtaining elemental carbon. Styrene ethylene and vinyl chloride are some of the most widely used monomers in polymer production. Polymerizing the monomers contained in the substrate is an inherent step involved in the formation of polymers in the substrate.

21. It also would have been obvious to a person ordinarily skilled in the art at the time of the invention as required by claims.

### ***Conclusion***

Claims 41-89 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Schiro whose telephone number is 571-270-5345. The examiner can normally be reached on Monday-Friday from 8:30 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached at 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished



Art Unit: 1792

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